WHAT IS CLAIMED IS:

1.   An image forming apparatus including a printing unit
capable of receiving and printing monochromatic and color
images and performing printing operation by selecting one

5   of a plurality of printing capabilities, comprising:

first discrimination means for discriminating
whether a received image is a color or monochromatic image;

second discrimination means for discriminating a
printing capability of said printing unit;

10   storage means for storing the received image; and

control means for performing control, on the basis
of the discrimination results obtained by said first and
second discrimination means, to automatically print the
received image by using said printing unit or store the

15   received image in said storage means.

2.   The apparatus according to claim 1, wherein said
printing unit comprises an ink-jet printhead.

3.   The apparatus according to claim 2, wherein the
ink-jet printhead includes a first printhead for

20   monochromatic printing and a second printhead for color
printing.

4.   The apparatus according to claim 3, wherein the first
printhead and an ink tank containing a black ink constitute
a first cartridge,

25   the second printhead and a plurality of ink tanks
respectively containing black, cyan, magenta, and yellow

inks constitute a second cartridge, and

the second printhead and a plurality of ink tanks
respectively containing black, cyan, magenta, and yellow
inks which differ in density from the inks contained in the
5   second cartridge and are suitable for high-quality color
image printing constitute a third cartridge.

5.   The apparatus according to claim 4, wherein said
printing unit includes:

loading means into which one of the first to third
10   cartridges is loaded; and

detection means for detecting the presence/absence
of ink remaining in the cartridge loaded into the loading
means.

6.   The apparatus according to claim 5, wherein said
15   second discrimination means discriminates the type of
cartridge loaded into the loading means.

7.   The apparatus according to claim 6, further
comprising detection control means for controlling the
detection means to detect the presence/absence of ink
20   remaining in the second cartridge upon selecting ink whose
presence/absence is to be detected in accordance with the
first discrimination result when it is discriminated on the
basis of the discrimination result obtained by said second
discrimination means that the second cartridge is loaded
25   into the loading means.

8.   The apparatus according to claim 5, wherein said

control means performs control to store the received image in said storage means in accordance with the detection result obtained by said detection means.

9.   The apparatus according to claim 6, wherein if said first discrimination means discriminates reception of a monochromatic image, and said second discrimination means discriminates that the third cartridge is loaded into the loading means, said control means performs control to store the received image in said storage means.

10.   The apparatus according to claim 6, wherein if said first discrimination means discriminates reception of a color image, and said second discrimination means discriminates that the first or third cartridge is loaded into the loading means, said control means performs control to store the received image in said storage means.

11.   The apparatus according to claim 6, wherein if said first discrimination means discriminates reception of a monochromatic image, and said second discrimination means discriminates that the second cartridge is loaded into the loading means, while the detection means detects that no black ink is left, said control means performs control in accordance with a condition set in said apparatus in advance to print the received image by using process black or store the received image in said storage means.

12.   The apparatus according to claim 2, wherein said ink-jet printhead comprises an electrothermal transducer

for generating heat energy supplied to ink in order to discharge the ink by using the heat energy.

13.   The apparatus according to claim 1, further comprising instruction means for instructing said printing unit to print a received image stored in said storage means.

14.   The apparatus according to claim 1, further comprising holding means for holding information for identifying each page of the received image as a monochromatic or color image.

15.   An image forming apparatus including a printing unit capable of receiving and printing monochromatic and color images and performing printing operation by selecting one of a plurality of printing capabilities, comprising:

reception means for receiving the image from a communication line;

first discrimination means for discriminating whether the received image is a color or monochromatic image;

second discrimination means for discriminating a printing capability of said printing unit;

storage means for storing the received image; and

control means for performing control, on the basis of the discrimination results obtained by said first and second discrimination means, to automatically print the received image by using said printing unit or store the received image in said storage means.

16.   A printing control method of performing
reception/printing control on monochromatic and color
images, comprising:

the reception step of receiving the image from a
5   communication line;

the first discrimination step of discriminating
whether the received image is a color or monochromatic
image;

the second discrimination step of discriminating a
10   currently selected printing capability of a printing unit
capable of selecting one of a plurality of printing
capabilities and printing an image; and

the control step of performing control, on the basis
of the discrimination results obtained by in the first and
15   second discrimination steps, to automatically print the
received image by using the printing unit or store the
received image in an image memory.

17.   A computer-readable medium storing a program for
executing reception/printing control on monochromatic and
20   color images, wherein the program comprises:

a code for executing a reception process of receiving
the image from a communication line;

a code for executing a first discrimination process
of discriminating whether the received image is a color or
25   monochromatic image;

a code for executing a second discrimination process

of discriminating a currently selected printing capability
of a printing unit capable of selecting one of a plurality
of printing capabilities and printing an image; and

a code for executing a control process, on the basis
of the discrimination results obtained in the first and
second discrimination processes, to automatically print
the received image by using the printing unit or store the
received image in an image memory.

18. A communication apparatus including a printing unit
capable of receiving and printing monochromatic and color
images and performing printing operation by selecting one
of a plurality of printing capabilities, comprising:

reception means for receiving the image from a
communication line;

discrimination means for discriminating contents of
the image received by said reception means; and

detection means for detecting a remaining amount of
printing agent in said printing unit.

19. The apparatus according to claim 18, wherein
said printing unit includes a detachable printing
cartridge, and

said detection means further detects a remaining
amount of printing agent in accordance with the type of
printing cartridge.

20. The apparatus according to claim 18, further
comprising storage means for storing the detection result

obtained by said detection means.

21.   The apparatus according to claim 19, wherein said printing cartridge includes a printing cartridge for monochromatic printing and a printing cartridge for color printing, which contains black, cyan, magenta, and yellow printing agents.

22.   The apparatus according to claim 21, wherein

said printing cartridge includes a photographic printing cartridge for reproducing an image having higher quality than an image reproduced by the printing cartridge for color printing, and

said detection means detects no remaining amount of printing agent in the photographic printing cartridge.

23.   The apparatus according to claim 22, whrein when the photographic printing cartridge is loaded, no automatic printing is performed upon reception of an image.

24.   A printing agent detection method for a communication apparatus including a printing unit capable of receiving and printing monochromatic and color images and performing printing operation by selecting one of a plurality of printing capabilities, comprising:

the reception step of receiving the image from a communication line;

the discrimination step of discriminating contents of the image received in the reception step; and

the detection step of detecting a remaining amount

of printing agent in the printing unit on the basis of the discrimination result obtained in the discrimination step.

25. A computer-readable storage medium storing a program for performing detection processing of a printing agent used by a communication apparatus including a printing unit capable of receiving and printing monochromatic and color images and performing printing operation by selecting one of a plurality of printing capabilities, wherein the program comprises:

a code for executing a reception process of receiving the image from a communication line;

a code for executing a discrimination process of discriminating contents of the image received in the reception process; and

a code for executing a detection process of detecting a remaining amount of printing agent in the printing unit on the basis of the discrimination result obtained in the discrimination process.

26. An image forming apparatus which can receive both a monochromatic image and a color image and mount at least one of a plurality of types of image forming means, comprising:

image memory means capable of storing a received image;

image attribute discrimination means for discriminating received images as monochromatic or color

images in predetermined units;

image attribute holding means for holding the discrimination result obtained by said image attribute discrimination means;

5   received image output determination means for determining, on the basis of a combination of information held in said image attribute holding means and the type of mounted image forming means, whether to output a received image or store the image in said image memory means without

10   outputting the image; and

control means for controlling output operation of said mounted image forming means or controlling storage of the received image in said image memory means in accordance with the determination result obtained by said received

15   image output determination means.

27.   The apparatus according to claim 26, wherein each of said plurality of types of image forming means includes at least a printing agent of one color, and the colors of the printing agents held by said respective image forming means

20   differ in combination.

28.   The apparatus according to claim 26, wherein each of said plurality of types of image forming means includes at least a printing agent of one color, the colors of the printing agents held by said respective image forming means

25   differ in combination, and at least one of said image forming means using printing agents of a plurality of colors

can form an image by using only a printing agent of a specific color of the printing agents of the plurality of colors.

29.   The apparatus according to claim 26, wherein said plurality of types of image forming means include a plurality of types of image forming means using printing agents of a plurality of colors, and said image forming means using the printing agents of the plurality of colors differ in gray-scale expressing capability.

30.   The apparatus according to claim 26, wherein if the information held by said image attribute holding means indicates that the received image includes a color image, and said mounted image forming means is of a type capable of forming an image by using only a monochromatic printing agent, said received image output determination means determines to store the received image in said image memory means without outputting the image.

31.   The apparatus according to claim 27, wherein if the information held by said image attribute holding means indicates that the received image includes a color image, and said mounted image forming means is of a type capable of forming an image by using printing agents of a plurality of colors, said received image output determination means determines in accordance with a gray-scale expressing capability of said image forming means whether to output the received image.

32.   The apparatus according to claim 31, wherein if the

information held by said image attribute holding means indicates that the received image includes a color image, and said mounted image forming means is of a type that is capable of forming an image by using printing agents of a

5　plurality of colors and has a gray-scale expressing capability higher than a predetermined capability, said received image output determination means determines to store the received image in said image memory means without outputting the image.

10　33.　The apparatus according to claim 28, wherein if the information held by said image attribute holding means indicates that the received image is a monochromatic image, and said mounted image forming means is of a type that is capable of forming an image by using printing agents of a

15　plurality of colors and also capable of forming an image by using only a printing agent of a specific color of the printing agents of the plurality of colors, said received image output determination means determines to output the received image by using the specific color.

20　34.　The apparatus according to claim 26, further comprising means for notifying and/or displaying the type of image forming means capable of outputting the received image when said received image output determination means stores the received image in said image memory means.

25　35.　An image forming method of forming an image from a received image constituted by a monochromatic image and/or

a color image by using at least one of a plurality of types of image forming means, comprising:

the image attribute discrimination step of discriminating received images as monochromatic or color images in predetermined units;

the image attribute holding step of holding the discrimination result obtained in the image attribute discrimination step;

the received image output determination step of determining, on the basis of a combination of information held in the image attribute holding step and the type of mounted image forming means, whether to output a received image or store the image without outputting the image; and

the control step of controlling output operation of the mounted image forming means or controlling storage of the received image.

36. The method according to claim 35, wherein each of said plurality of types of image forming means includes at least a printing agent of one color, and the colors of the printing agents held by said respective image forming means differ in combination.

37. The method according to claim 35, wherein each of said plurality of types of image forming means includes at least a printing agent of one color, the colors of the printing agents held by said respective image forming means differ in combination, and at least one of said image forming means

using printing agents of a plurality of colors can form an image by using only a printing agent of a specific color of the printing agents of the plurality of colors.

38.   The method according to claim 35, wherein said plurality of types of image forming means include a plurality of types of image forming means using printing agents of a plurality of colors, and said image forming means using the printing agents of the plurality of colors differ in gray-scale expressing capability.

39.   The method according to claim 35, wherein if the information held in the image attribute holding step indicates that the received image includes a color image, and the mounted image forming means is of a type capable of forming an image by using only a monochromatic printing agent, the received image output determination step comprises determining to store the received image.

40.   The method apparatus according to claim 36, wherein if the information held in the image attribute holding step indicates that the received image includes a color image, and the mounted image forming means is of a type capable of forming an image by using printing agents of a plurality of colors, the received image output determination step comprises determining in accordance with a gray-scale expressing capability of the image forming means whether to output the received image.

41.   The method according to claim 40, wherein if the

information held in the image attribute holding step

indicates that the received image includes a color image,

and the mounted image forming means is of a type that is

capable of forming an image by using printing agents of a

5   plurality of colors and has a gray-scale expressing

capability higher than a predetermined capability, the

received image output determination step comprises

determining to store the received image.

42.   The method according to claim 37, wherein if the

10   information held in the image attribute holding step

indicates that the received image is a monochromatic image,

and the mounted image forming means is of a type that is

capable of forming an image by using printing agents of a

plurality of colors and also capable of forming an image

15   by using only a printing agent of a specific color of the

printing agents of the plurality of colors, the received

image output determination step comprises determining to

output the received image by using the specific color.

43.   The method according to claim 35, further comprising

20   the notification step of notifying and/or displaying the

type of image forming means capable of outputting the

received image when the received image is stored in the

received image output determination step.

44.   A communication apparatus which can receive both a

25   monochromatic image and a color image and mount at least

one of a plurality of types of image forming means,

comprising:

image memory means capable of storing a received image;

image attribute discrimination means for

5   discriminating received images as monochromatic or color images in predetermined units;

image attribute holding means for holding the discrimination result obtained by said image attribute discrimination means;

10   received image output determination means for determining, on the basis of a combination of information held in said image attribute holding means and the type of mounted image forming means, whether to output a received image or store the image in said image memory means without

15   outputting the image; and

control means for controlling output operation of said mounted image forming means or controlling storage of the received image in said image memory means in accordance with the determination result obtained by said received

20   image output determination means.

45.   A control method for communication apparatus which can receive both a monochromatic image and a color image and mount at least one of a plurality of types of image forming means, comprising:

25   the image attribute discrimination step of discriminating received images as monochromatic or color

images in predetermined units;

the image attribute holding step of holding the discrimination result obtained in the image attribute discrimination step;

5   the received image output determination step of determining, on the basis of a combination of information held in the image attribute holding step and the type of mounted image forming means, whether to output a received image or store the image without outputting the image; and

10   the control step of controlling output operation of the mounted image forming means or controlling storage of the received image.

46.   A computer-readable storage medium storing a control program for an image forming apparatus which can receive both a monochromatic image and a color image, has image

15   memory means for storing a received image, and can mount at least one of a plurality of types of image forming means, wherein the program comprises:

a code for executing an image attribute

20   discrimination process of discriminating received images as monochromatic or color images in predetermined units;

a code for executing an image attribute holding process of holding the discrimination result obtained in the image attribute discrimination process;

25   a code for executing a received image output determination process of determining, on the basis of a

combination of information held in the image attribute

holding process and the type of mounted image forming means,

whether to output a received image or store the image in

said image memory means without outputting the image; and

5   a code for executing a control process of controlling

output operation of said mounted image forming means or

controlling storage of the received image in said image

memory means in accordance with the determination result

obtained in the received image output determination

10   process.

47.   A computer-readable storage medium storing an image

forming program for forming an image from a received image

constituted by a monochromatic image and/or a color image

by using at least one of a plurality of types of image forming

15   means, wherein the program comprises:

a code for executing an image attribute

discrimination process of discriminating received images

as monochromatic or color images in predetermined units;

a code for executing an image attribute holding

20   process of holding the discrimination result obtained in

the image attribute discrimination process;

a code for executing a received image output

determination process of determining, on the basis of a

combination of information held in the image attribute

25   holding process and the type of mounted image forming means,

whether to output a received image or store the image

without outputting the image; and

a code for executing a control process of controlling output operation of said mounted image forming means or controlling storage of the received image in accordance with the determination result obtained in the received image output determination process.

48. An image forming apparatus which can receive both a monochromatic image and a color image and mount at least one of a plurality of types of image forming means, comprising:

image attribute discrimination means for discriminating a received image as a monochromatic or color image in units of pages;

determination means for determining an attribute of one communication on the basis of the discrimination result obtained by said image attribute discrimination means; and

control means for outputting the received image to output means asynchronously with a determination process performed by said determination means.

49. The apparatus according to claim 48, wherein said control means controls image output operation on the basis of a discrimination result on a first page which is obtained by said image attribute discrimination means.

50. The apparatus according to claim 48, wherein said output means comprises a printer, and said control means performs control, on the basis of the discrimination result

obtained by said image attribute discrimination means, to perform printing operation using said printer or memory alternate reception.

51.   An image forming method of forming an image from a received image constituted by a monochromatic image and/or a color image by using at least one of a plurality of types of image forming means, comprising:

the image attribute discrimination step of discriminating a received image as a monochromatic or color image in units of pages;

the determination step of determining an attribute of one communication on the basis of the discrimination result obtained in the image attribute discrimination step; and

the control step of outputting the received image to output means asynchronously with a determination process performed in the determination step.

52.   A computer-readable storage medium storing an image forming program for forming an image from a received image constituted by a monochromatic image and/or a color image by using at least one of a plurality of types of image forming means, wherein the program comprises:

a code for executing an image attribute discrimination process of discriminating a received image as a monochromatic or color image in units of pages;

a code for executing a determination process of

determining an attribute of one communication on the basis

of the discrimination result obtained in the image

attribute discrimination process; and

a code for executing a control process of outputting

5   the received image to output means asynchronously with a

determination process performed in the determination

process.

53.   An image forming apparatus comprising:

read means for reading an original by using an optical

10   mechanism;

printing means for printing the image read by said

read means;

cartridge type determination means for determining

a type of loaded ink cartridge;

15   discrimination means for discriminating whether the

ink cartridge determined by said cartridge type

determination means is an ink cartridge corresponding to

the image read by said read means; and

notification means for, when said discrimination

20   means discriminates that no ink cartridge corresponding to

the image read by said read means is loaded, notifying a

user of corresponding information.

54.   The apparatus according to claim 53, wherein said

discrimination means comprises means for discriminating,

25   on the basis of all images of a plurality of pages read by

said read means, whether the loaded ink cartridge is

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suitable.

55.   The apparatus according to claim 54, wherein said printing means comprises means for executing no printing operation if no ink cartridge corresponding to the image read by said read means is loaded after the notification.

56.   An image forming apparatus comprising:

communication means capable communication with a distant apparatus through a predetermined line;

printing means for printing the image read by said communication means;

cartridge type determination means for determining a type of loaded ink cartridge;

discrimination means for discriminating whether the ink cartridge determined by said cartridge type determination means is an ink cartridge corresponding to the image received by said communication means; and

notification means for, when said discrimination means discriminates that no ink cartridge corresponding to the image received by said communication means is loaded, notifying a user of corresponding information.

57.   The apparatus according to claim 56, wherein said discrimination means comprises means for discriminating, on the basis of all images of a plurality of pages received through said communication means, whether the loaded ink cartridge is suitable.

58.   The apparatus according to claim 57, wherein said

printing means comprises means for executing no printing

operation if no ink cartridge corresponding to the image

received by said communication means is loaded after the

notification.